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A PLEA FOR THE CLASSICS; AND REMARKS ON FORMAL DISCIPLINE

In the *Baylor Bulletin* 19.1-41, published by Baylor University, at Waco, Texas, in January, 1916, Professor J. W. Downer had an article entitled *A Plea for Latin*. After introductory remarks on the status of Latin in the United States (3-6), Professor Downer presents arguments for the study of Latin (6-12). This is followed by a consideration of the objections to the study of Latin (12-28).

In his discussion of the arguments for the study of Latin, Professor Downer begins (6) by quoting from the address given by Professor W. G. Hale at the laying of the cornerstone of the new Classics Building at the University of Chicago (*The Classical Journal* 10. 387-395):

Because they championed the rights of men, they <the professors of Latin in the Middle Ages> were called 'humanists'. . . . In their triumph, Europe became humanistic. Thus classical education is not, as is so often thoughtlessly said, an inheritance from mediaevalism. It was the principal engine of revolt against mediaevalism. Classical education was the result of the victory of the free human spirit.

Professor Downer advances as the first and prime reason for the study of Latin its relation to our own English language. Here again he quotes with approval Professor Hale, from the same address:

We ought not, then, to think of our native speech as Anglo-Saxon, with some elements of Latin superimposed; we ought to think of it, and speak of it, as Anglo-Latin. If we call Anglo-Saxon the mother tongue of our race, then we should call Latin our father tongue.

Professor Downer holds (7) that the mastery of English grammar is attained by few without the study of Latin. Even greater than the value of Latin in the mastery of the structure of English sentences is its value in etymology and derivation of words. He insists also on the value of translation from Latin into English as an aid to the mastery of English expression (9-10). He passes on to emphasize "the mental development acquired by the mastery of" Latin, "or even by the partial mastery of the subject". In thus refusing to stand in awe of the term discipline as applied to the study of Latin, Professor Downer can cite nowadays considerable support, even from psychologists. Witness, for example, the quotation in *THE CLASSICAL WEEKLY* 8.113-114 from the paper contributed by Dr. Lawrence W. Cole, a psychologist, to the University of

Colorado pamphlet on *The Value of Latin and Greek*. The views there expressed Professor Cole elaborated in a very excellent article, entitled *General Intelligence and the Problem of Discipline*, which was published in *The Classical Journal* 10.358-369. Encouraging too is the chapter, *Generalized Experience*, in the book entitled *Psychology of High School Subjects*, by Charles H. Judd, Professor of Education at the University of Chicago (Ginn and Company, 1915). The chapter covers pages 392-435. This chapter is particularly encouraging in view of the fact that Professor Judd is no special friend of the Classics (see *THE CLASSICAL WEEKLY* 7.9-10, 17-18). Reference may also be made to an article entitled *The Doctrine of General Discipline*, by Professor Ernest C. Moore, of Harvard University, which appeared in *Education* for January, 1917, pages 312-324. There is some inconsistency in this paper, in statements of fact and theory both, and in the use of terms. It is a serious effort to belittle the doctrine of formal or general discipline: yet, against his will, the author says much in which the classicist finds comfort. In *School and Society* 2.378-385 (Vol. 2, No. 37), Professor Charles N. Moore, of the University of Cincinnati, in a valuable article entitled *On Correlation and Disciplinary Values*, points out that the "results" obtained by "anti-disciplinarians", Professor Thorndike among them, are vitiated by their ignorance of mathematics. Professor Moore's concluding paragraph is as follows:

Enough has been said here, however, to indicate that mathematical questions of some delicacy are involved in the interpretation of correlation results. That this has not prevented writers of little mathematical training, who had obtained correlation results by blindly following a given formula, from drawing sweeping conclusions from such results, only goes to show how little claim to scientific procedure the anti-disciplinarians have. It is evident from recent utterances that some of them are beginning to have an uneasy conscience with regard to the validity of their processes. It is to be trusted that they will go a little further in their admissions of error and frankly confess that they were not justified in drawing the conclusions they have drawn with regard to disciplinary values.

A more technical mathematical discussion of the subject, adverse to the anti-disciplinarians, appeared in *Science* 42.575-579 (No. 1086, October 22, 1915). In *School and Society* 6.767-770 Professor Moore returns to the subject, in a letter on *The Inadequacy of Arguments against Disciplinary Values*. In the *Educational*

Review, in a paper entitled *Disciplinary Values*, Professor Moore, had, in October last, championed the doctrine that

disciplinary values form a very important part of the benefits derived from education. This will be <demonstrated> in two ways, first by pointing out the weakness of the arguments directed against this position, second by presenting some of the important evidence in favor of it.

In the last named paper Professor Moore advises the psychologists who are so sure that no psychologist believes any longer in discipline and correlation, to follow their own advice to "study more closely the works of psychologists".

Professor Downer turns now to consider the objections to the study of Latin. Of the nineteen objections considered most are familiar. Professor Downer discusses them with admirable temper, admitting in more than one case that the criticisms are in large measure just. He appends a discussion of the deficiencies of the average College Freshman in Latin and the remedies therefor (28-40). For the fact that students of Latin on entering College do not know forms and syntax and cannot put simple Latin into intelligent English and are still less able to put simpler English into Latin, he finds two groups of causes: (1) causes due to the student, and (2) causes due to the teachers of Latin (31-40). Under the former head, he emphasizes the prejudice entertained by the majority of students from the outset against Latin. They acquire this prejudice because they hear so much on every hand said against the study of Latin. "Feeling this way about it, they naturally do not work hard enough to find out anything of value in the study of Latin" (30). Next (30-31) he deplores the use, or rather "abuse in the use", of translations by the great majority of students in preparing their Latin lessons. There is here a very serious difficulty, which Professor Downer does not blink. He points out, however, what is often forgotten or at least not mentioned by the opponents of the study of Latin, that students of languages other than Latin and Greek use translations. We have a parallel situation (30)

also. . . <in> mathematics, in the sense that keys are used or at least help is gotten from other students better prepared. It is also true of written work in English and history that students get help from those who know more. It is true of all subjects in all schools in a greater or less degree.

To be sure the you-are-another argument has per se no great merit. But Professor Downer was justified in making the point in this particular connection, because of the insistence of the enemies of Latin on the idea that the use of translations by students of Latin minimizes or completely nullifies the supposed values of the study of Latin. In like manner, when a Professor of Education argues that the amount of time bestowed upon Latin in the Schools should be diminished because Latin is badly taught, it is quite fair to retort that his argument, logically pursued, means the elimination from the Schools of every subject now taught, or of every

subject that could by any possibility be included in the School curriculum, because in every subject there always have been, there always are, and there always will be poor teachers and poor students.

Professor Downer passes on to say (31) that "the main fault lies with the teacher rather than the student". Here he puts first and foremost the lack of the proper knowledge of Latin on the part of the great majority of the teachers in our Secondary Schools. If he is not at home in his subject, how can a teacher put any enthusiasm into his teaching or into his students? With a teacher who does not know Latin, who is unaware what its value is in an education, and a student who does not "like the stuff" anyhow, how could anyone expect students to be well prepared in Latin? His remarks on the measure of attainment proper for a decent teacher of Latin (32-33) are well worth reading. He assigns next as a very important reason for lack of success by teachers the failure on the part of the teachers, even those who know the subject, to realize what are the essential things to be taught. On page 33 we read:

We hear much these days of the ways of adding interest to the study of Latin. If we may take some teachers at what they say, the most of their time is taken up with the ways of making Latin interesting, and so they have little time to get to the real Latin in their teaching. Latin is interesting of itself, if the teacher has the knowledge and the knack to make the student see what is there.

One common hindrance to efficient teaching is, according to Professor Downer, to be found in the fact that many teachers allow students to dissociate the knowledge of the *Beginners' book* and the *Latin Grammar* from the proper interpretation of Latin in their future study (34-35). He makes some sane remarks (35-36) on the fact that many teachers take it for granted that their students know more than they in fact do and hence shoot in their teaching over the heads of their students.

This drill work of the preceding paragraphs is tedious and irksome to many teachers, and it is so much easier and more pleasant to shoot high, appear learned, and get the name of being an entertaining teacher. . . . I have known teachers who could be led off into history, or mythology, or to some other hobby.

This mistake in teaching is made, he maintains, by many teachers also in the Colleges and the Universities.

Passing now to a consideration of the remedies for the deficiencies in Latin, Professor Downer maintains that the mere stating of the case, as a rule, suggests the remedy. If the great majority of Latin teachers are not properly equipped for doing thorough work in Latin, it is our business as Latin teachers to see that the standard is raised. Teachers in Colleges and High Schools should recommend for teaching positions in Latin only such persons as are really equipped. Teachers should be encouraged to do some graduate work, to make teaching a profession, to take pride in their work, and to see just what practical value Latin has in education. If they do these things, they will be filled with

enthusiasm for the subject and will inspire their students to the same enthusiasm.

Finally, Professor Downer has some interesting remarks, into which, for lack of space, we cannot follow him, about the remedies for the use and the abuse of translations (38-40).

A feature of the paper highly to be commended is the Index (41).

C. K.

THE TERMINOLOGY OF ANATOMY¹

A curious and interesting history attaches itself to the names bestowed upon the various parts of the human body. Some belong to the Renaissance period; others go back to the time of Galen, i. e. to the first century of our era; others had their origin still farther back in the ancient classical world. In this inviting field, science and the Classics may happily go hand in hand. The old anatomists, in their endeavor to describe a structure, sought often for some familiar object by which to designate it, something that was both homely and appropriate. The result is that strange terminology of technical science which is at once the despair and the bugbear of the layman and the beginner. To let a name serve merely as a tag to a structure, however, and to neglect the allusion and the history which the name itself contains, is to miss half the delight in the work. A student of the Classics, too, may find it not unworthy of his time thus to contemplate the lineaments of his being.

Two sheets of tissue invest the delicate structure of the brain, protecting and nourishing it as a mother might her child. This, at least, was the way the ancient Arabic anatomists viewed it, and they called one by a name later rendered into Latin by *dura mater*. Their name for the inner, closely investing, sheet of nourishing blood vessels was later translated by *pia mater*. Between these two membranes is a tissue of threads and strands like a cobweb; hence its Greek designation, *ἀραχνοειδής*, 'like a cobweb'.

For the parts of the brain there is a wonderful array of picturesque terms. Its outer surface of gray matter is the *cortex*. This sheet of 'bark' is folded and crumpled into a strange and characteristic pattern. Each curve of the folding is a *gyrus*, 'ring'. Between the folds are the 'furrows', *sulci*. In ordinary language we speak of these as 'convolutions' and 'fissures'. The globe of the brain is divided into two hemispheres, and in the fissure between them the *dura mater*, curved like a sickle, forms the *falx*, its front end fastened to a bony knob that looks like the comb of a cock and so is called *crista galli*. The horizontal stretch of *dura mater* between the cerebrum and the cerebellum is the *tentorium*, or tent-like cover. Four rounded bodies joined closely together and lying deep in the center of the brain are the *corpora quadrigemina*. In front of them is a curious structure, shaped like a pine cone, the 'pineal' body,

which the ancients regarded as the seat of the soul. In the base of each hemisphere is a mass of gray matter, out of which the optic nerve was supposed to emerge. The old anatomists likened this hidden structure to a room in a house, and hence called it *thalamus*. A patch of gray matter hidden deep in the hemisphere is called the *claustrum*. The posterior inner tubercle of the *thalamus* is the *pulvinar*, 'cushion'. Between the two *thalami* is a space, the third 'ventricle'. The term 'ventricle' is applied to several such enclosed hollow areas throughout the body. Arching over this third ventricle is a band of fibers, the *fornix*, 'arch'. The floor of the third ventricle falls into a funnel-like structure, the *infundibulum*, at the bottom of which is the pituitary body, so called from the ancient supposition that this structure secreted phlegm (compare Latin *pituitarius*). Leading back from the third to the fourth ventricle is a passage known as the *iter e tertio ad quartum ventriculum*; it is sometimes called the Aqueduct of Sylvius. A curious fold of gray matter plunges down toward the base of each hemisphere, which, from its fancied resemblance to a fish called the sea-horse, received the name of Hippocampus. At the bottom of the great fissure separating the two hemispheres is a band of tough fibres which the old anatomists called, on account of its hardness as compared with the surrounding brain matter, the *corpus callosum*.

Many other strange and interesting names applied to various parts of the brain might be enumerated, e. g. the *nidus hirundinis*, or the spur-like 'calcarine' fissure, or the bordering 'limbic' lobe (compare Latin *limbus*).

From the brain one passes quite naturally to a consideration of the skull, a word derived from an old English dialectic source. The word *calvarium*, the top or dome of the skull (compare Latin *calvaria*, 'skull') is of interest in relation to the word Calvary. Of the bones that form the skull, the 'parietals' are walls. These are 'occipital' (compare Latin *occiput*), or 'temporal' (compare Latin *tempora*). The 'sphenoid' is a curious bone wedged in the base between the others (compare *σφηνοειδής*, 'wedge-like'). The 'ethmoid' is a sieve-like bone (compare *ἄθμός*, a 'strainer') through which the olfactory nerves pass to the nose. Other terms are 'malar' (compare Latin *mala*), and the 'mandible', the lower jaw (compare late Latin *mandibula*, from *mandere*, 'to masticate'). 'Genial' relating to the chin, is from Latin *gena*. The 'turbinal', a scroll or wheel-like bone in the nose, reminds us of Latin *turbo*. The bar of bone that forms the side of the cheek, connecting the temporal with the malar, is the 'yoke'; (*zygoma*, *ζύγωμα*); the two bones were thought of as yoked together. The eye socket, from its circular rim, is called the 'orbit' (compare Latin *orbis*). The hairless space between the eyebrows is the 'glabella' (compare Latin *glaber*, 'smooth'). The top of the head is indicated by a Greek term, *bregma*. Here, in infancy, a deficiency of bone formation leaves a space in which the pulsing of the blood flow to the brain may be seen and felt; this pulsing has given rise to the name 'fontanelle'

¹The writer of this article is a physician, and Professor of Biology at Swarthmore College.

(compare Latin *fons*). The irregular seams by which the various bones of the skull articulate with one another are 'sutures'; the transverse one between the frontal and the parietals is the 'coronal', where the king's crown is worn. The fore and aft seam between the two parietals is the 'sagittal', the arrow to the bow-string made by the coronal. The suture uniting the parietals and the occipital is called the 'lambdoidal', from its fancied resemblance to the Greek letter lambda.

The word 'skeleton' itself is of Greek origin, and means 'dried up', 'withered'. In the structure of certain bones of the skull there is a spongy place between the outer and an inner harder layer which is known as the 'diploe', a term from the Greek, meaning 'doubled', 'folded over'; the two compact layers are apparently folded the one on the other. Many openings, *foramina*, pierce the walls of the skull, especially its base; through these, nerves and blood vessels pass. Certain depressions or irregularities forming hollows have received the name *fossae*. A deep recess or an inclosure in a bone communicating with outer structures has received the picturesque name of *sinus*, the Latin word which, along with other meanings, denoted a bay or an inlet. This term is likewise applied to various recesses throughout the body, as in the case of the *sinus venosus*, where the blood pools just before entering the heart. *Antrum* is similarly used for the great cavity in the maxillary bone. A 'condyle' is a knob of bone articulating with a shallow depression or 'glenoid' surface; of these terms, the former is from a Greek word meaning 'a knuckle', the latter from a Greek word meaning 'a socket'. The word 'vertebra' comes from the Latin *vertere*; the body is twisted around on this axis. The first vertebra, on which the skull rests, is the 'atlas'. In anatomy the articulation between the atlas and the axis vertebrae is known as the 'atlanto-axial'. At the other end of the vertebral column is the *sacrum*; this part was once used as a dainty bit of sacrifice. *Lumbar* is from Latin *lumbus*, 'loin'. The breast bone, *sternum* (*στένον*), from its fancied resemblance to a Roman dagger, has given rise to several interesting names. The upper portion is the *manubrium*, 'handle'. The central piece is the *gladiolus*, 'blade'; the pointed lower end is the 'ensiform'. 'Styloid' is a name given to certain slender processes of bone: compare Latin *stilus*. A blister-like protuberance of the skull in the carbone of the carnivora is called the *bullae*. On the shoulder blade or *scapula* is the 'acromium', a word derived from the Greek; it = 'the extremity of the shoulder'. The so-called collar bone is the 'clavicle', from Latin *claviculus*, diminutive of *clavis*, 'key', 'bolt'. The arm pit is in technical language the *axilla*, the point about which the arm is rotated; compare Latin *axis*, English 'axle'. On the scapula also is a process of bone which, in the fancy of the old anatomists, looked somewhat like the beak of a crow; hence they called it the 'coracoid' (*κόραξ*, 'a crow'). At the lower end of the vertebral column is a group of vertebrae, the vestige of a tail, the end bone of which, from its likeness to a cuckoo's beak,

was called the 'coccyx' (*κόκκυξ*, 'a cuckoo'). The arm bone is the *humerus*. In the fore arm is the *radius*, 'a spoke' or 'a shaft', and the *ulna*; its upper end is the 'olecranon' (*ὀλέκρانون*), 'the head of the ulna'. 'Carpus' is the wrist (*κάρπος*). Fingers and toes are 'digits' (compare Latin *digitus*). Each one is made up of 'phalanges'; the row of bones is likened to a line of battle. The haunch or hip bones with the sacrum form the *pelvis*, 'a basin', holding, as it were, the organs. Each half of the pelvis is an *os innominatum*; the designation is a declaration of inability to bestow a significant name. The socket of the hip joint is an *acetabulum*, 'vinegar cruet'. The great bump on the upper and outer side of the femur is the 'trochanter', a word akin to *τρέχω*, 'run'. This is the hip proper. Over the knee joint is the *patella*, or knee cap (sometimes called the knee pan). Certain small bones are lodged in tendons where they cross joints, as in the thumbs; these are 'sesamoid' (compare *σησάμη*, 'sesame'). In the knee joint are two crescentic pieces of cartilage, each of which is a *meniscus* (compare *μηρίσκος*, 'the crescent of the moon'). In the leg the larger bone is the *tibia*; the outer bone is the *fibula*. The bump on each side of the ankle is a *malleolus*, 'a little hammer'. *Tarsus* means a flat surface, the flat of the foot (*ταρσός*). The tarsal bone articulating with the tibia is the *astragalus*, 'knuckle-bone', a term Greek in origin. The heel bone is the *calcaneum* (compare Latin *calcar*, 'a spur'), either as the part on which the spur is clamped, or, what appears more likely, its backward projection was viewed as a cock's spur. Where tendons play over joints, there is a sac or 'bursa' (compare *βύρσα*, 'hide'; 'wine-sack').

Many of the skeletal muscles have names of curious origin. 'Muscle' itself is from *musculus*, 'a little mouse', from the characteristic creeping motion of a muscle under the skin. The muscle that throws one of the lower limbs across the other is known as the 'sartorius', from Latin *sartor*, 'a tailor', that being the gentleman's characteristic pose. The tough connective tissue binding the bones at joints is a 'ligament' (compare Latin *ligare*). The part of a muscle fastened into a bone is a 'tendon' (compare Latin *tendere*). The great tendon fastening the calf muscles to the heel was Achilles's vulnerable point; hence it is called *tendo Achillis*. The 'deltoid', the fleshy mass on the top of the shoulder of a man, has a general likeness in form to the Greek letter delta. The 'buccinator' muscle of the cheek gets its name from the Latin *buccinare*, 'to blow the trumpet'. The hollow space back of the knee is the 'popliteal' space (compare the Latin *poples*); the tendinous cords on either side are the hamstrings. The sheets of connective tissue which invest each muscle are picturesquely called the 'sheaths', and an extended lining of this tissue is known as a *fascia*, 'fillet'.

'Cilia' are the eyelashes (compare Latin *cilium*; and 'supercilious'). The thin and transparent sheet of membrane on the outside of the eye-ball is the 'conjunctiva', so called because it is joined with the mucous

membrane of the nose through the tear duct. The 'iris' is named from Iris, goddess of the rainbow, from its play of light and color, and 'pupil' is from Latin *pupilla*, a little girl, from the small images seen in the eye (compare 'puppet' and *pupa*). The fine net-work of nerves and fibers where the images really play is the 'retina', a word derived, perhaps, from the Latin *rete*. The 'lens' of the eye is shaped like a bean or a lentil.

The ear is a mine of interesting and curious names. There is the *concha*, or outer shell of the ear, with its curved rim or helix (compare *ελix*, 'a spiral coil'); the 'tragus' gets its name from the Greek word for a goat, in allusion to the beard-like growth of hairs; the *meatus* is a channel leading inwards (compare *meare*; the sound, as it were, runs in); the *tympanum* is a 'drum'. In the inner ear are the 'labyrinth' and the *ampullae*, or swollen ends of the semicircular canals, so called from their likeness in form to the Roman *ampulla*. The spiral *cochlea*, where all the music of the world sounds, gets its name from the Latin word for a snail's shell. In it also are spiral passage-ways, or *scalae*, 'ladders', twisting around a central column, *modiolus*. The center of the tympanum is the *atrium*; above it is the 'attic'. The bony protrusion back of the ear is the 'mastoid' (compare *μαστός*, 'a breast', 'a nipple').

In the throat, the soft palate hangs down like a bunch of grapes; hence it is called *uvula*. The name 'larynx', 'chest', is Greek in origin; its cartilage, the 'thyroid', gets its name from the Greek word for a door-shaped shield. Below this is the 'cricoid', shaped like a signet-ring (*κρίκος*), and inside the cavity are the 'arytenoid' cartilages, whose name goes back to a Greek word for a pitcher. The wind-pipe, with its gristly rings, is the *trachea* (a term Greek in origin; it literally means 'a rough artery'). Above the larynx is the horse-shoe shaped bone of the tongue, 'hyoid', shaped like the Greek letter upsilon. In the folds of the throat are the 'tonsils' (compare *tonsilla*, 'a sharp stake', diminutive of *tonsa*, 'an oar'). The trachea forks into two 'bronchii' (compare *βρόγχος*, 'windpipe'). The *rima glottidis* is the slit or chink between the vocal chords (compare *rima*, 'a chink'; and the Greek word for tongue).

The heart has 'auricles', from the little ear-like projections above the spaces so called, and a *septum* between its right and left halves (compare Latin *saepes*, *saepium*). The heart, likewise, has 'valves', *valvae*. The great trunk leading from the heart, the 'aorta', gets its name from a Greek word meaning 'that which is hung', 'a strap', applied by Hippocrates to the bronchii, but later used by Aristotle for the vessel now bearing its name. 'Artery' is Greek in origin, but the source of the Greek word is not clear. Names of certain arteries come down from antiquity; thus 'carotid' is from a Greek verb signifying 'to stupify by compression'; the ancients believed that stupefaction was caused by squeezing these vessels. A large vessel springing from the abdominal aorta is called 'coeliac', 'of the belly', from *κοίλος*, 'hollow'. The arteries supplying the heart itself are the 'coronary' arteries (compare *corona*,

because they twist around that organ. 'Vein' is from the Latin *vena*; *vena cava* is the great cavernous vein of the abdominal cavity. The single vein that runs up the right side of the trunk to the heart is the 'azygous' (*ἀζυγος*), 'unyoked', 'unpaired'. In the neck is the 'jugular' vein (compare *ingulum*, a yoke). 'Jugal' is frequently applied to the malar bone, yoked with the temporal by the zygoma. A vein of the arm is called the 'basilic', 'royal'; this vein was once supposed to be of special importance. Carrying the blood from the digestive tract into the liver is the 'portal' (compare *porta*).

Secreting organs are 'glands', a word derived from Latin *glandula*, diminutive of *glans*, 'an acorn', from the supposed resemblance of certain of these structures to an acorn. Some glands resemble in their structure a bunch of grapes, and hence are termed 'racemose' (Latin *racemus*, 'a grape bunch'). Among the larger glands of the body is the 'pancreas' (compare *πᾶν*, 'all', *κρέας*, 'flesh'). The word 'spleen' is Greek in origin; 'salivary' recalls *saliva*. The sweetbreads or 'thymus' gland won its name from its fancied resemblance to a bunch of thyme, *thymum*. The term 'organ' is from *ὄργανον*, 'a tool'. 'Viscera', a term used for the internal organs of the body collectively, is Latin. 'Gullet' is from *gula*, 'throat'; the word is cognate with the heraldic term *gules*, 'red color', the color of the throat. 'Oesophagus', Greek in origin, means 'food carrier'. 'Stomach' is Greek in origin; it means 'a little mouth'. 'Pylorus', the right glandular end of the stomach just before it passes into the intestine, gets its name from a Greek word which means 'gate-keeper', 'warder'. 'Sphincter' is from a Greek verb meaning 'to shut tight'. 'Duodenum', the name for the first twelve inches of the intestine, is Latin in origin. 'Intestine' itself is Latin in origin. Its middle portion is the 'jejunum', from Latin *ieiunus*, 'fasting'—the food stuff is mostly absorbed before it reaches this part (the 'hungry gut'). The fold of peritoneum over the intestines is the 'omentum', 'apron'; 'peritoneum' is derived from Greek, and denotes something 'stretched around'. 'Splanchnic', applied to certain structures, is from the Greek word which means 'the inward parts'. An old name for the inward parts was *penetralia*. The chest cavity is the thorax (*θώραξ*, 'a breast plate'). The muscular sheet between it and the abdominal cavity is the 'diaphragm', a word traceable to a Greek verb meaning 'to hedge in'. The intestine is lined in certain parts by minute absorbing structures called 'villi', 'hairs'.

Among all the organs and tissues of the body nerves and vessels ramify in every direction, forming frequently a 'plexus', 'net-work'. Knots of nervous matter are scattered here and there, each knot being a 'ganglion', a term derived from a Greek word used at first to denote a tumor under the skin in the line of a tendon (the word is so employed by Galen), but later transferred to the gray matter aggregations of the nervous system. The 'sympathetic' system coordinates many of the sensori-motor activities. A nerve going to the eye, and inner-

vating one of the muscles which rotates the eyeball downwards is the *patheticus*, from the familiar Greek verb meaning to 'suffer'. Another pair of cranial nerves of wide distribution is known as the *par vagum*, 'the wandering pair'. Still another, divided into three branches, is the 'trigeminal'.

We have many 'insulas', 'lacunae', 'isthmuses', 'promontories', 'pyramids', a 'hiatus' here and there, 'canals', 'ducts', 'fenestrae', 'aqueducts', 'trochleas' ('pulleys'), 'tunics'.

SWARTIMORE COLLEGE.

SPENCER TROTTER.

RECENT ARCHAEOLOGICAL DISCOVERIES IN ITALY¹

The Italian Government deserves no little credit for continuing, notwithstanding the stress of war, the publication of the *Notizie degli Scavi* in the ample manner familiar to all archaeologists. While systematic digging is naturally turned to other than archaeological aims, the heroic present has not wholly displaced Italy's interest in her great past. These belated fascicles of the *Notizie* that lie before me now—three, four, five, and six of the year 1916—with their record of patient learning, awaken conflicting emotions. They seem to belong so wholly to the days before war came, something alien now, and forever remote. What does a bit of an ancient ruin matter now, or an ancient cemetery? But on second thought they seem a symbol of Italy's permanence too. It is as if this methodical measurement of groins and ashlar were in itself a realization that what has been still is and shall be, though the enemy stand at the gates.

In Rome, civic improvements have brought to light a variety of finds. Excavations on the Via Po (the ancient Via Salaria), during the last months of 1915 and the first of 1916, revealed a small rectangular Columbarium built of *opus reticulatum*, and one hundred and forty-three mortuary inscriptions. One of these, composed in pentameters, has a hemistich—*apstulit atra dies*—which is certainly an echo from Aeneid 6.429: *abstulit atra dies et funere mersit acerbo*. The chance discovery of a large marble sarcophagus at Mezzocammino, about 11 kilometers out on the Via Ostiensis, led to the excavation of an ancient cemetery and the identification of the Church of St. Cyriacus, which, according to the Liber Pontificalis, Honorius I (625-638) built at the seventh mile of the Via Ostiensis. The cover of the sarcophagus is divided into two fields by a rectangular shield held by two putti. To the right of it is a representation of Jonah being swallowed by the whale, to the left the adoration of the Magi. The front of the sarcophagus also contains Biblical scenes. To the right are the three miracles of the healing of the paralytic, the blind man restored to vision, and the resurrection of Lazarus; to the left, St. Peter renouncing Christ, St. Peter carried to prison, and Moses

striking the rock. A small apsidal building of the fourth century, parallel to the Via Ostiensis, disclosed other sarcophagi, two small, and one large. The Church itself, built upon a cemetery, is oriented from south-west to north-east, with the apse turned to the north-east. The entrance lay in the northern side. The lower portion of the walls consists of blocks of tufa, the upper of *opus incertum*. The dimensions of the foundations are about m. 20 x 8.

In repairing the walls of the Instituto Romano dei Beni Stabile (Via Principe Umberto), which were damaged by the earthquake of January 13, 1915, a solid pilaster, composed of six travertine blocks, was found. This may have formed a part of some structure in the Gardens of Maecenas. The R. Instituto Tecnico Leonardo da Vinci, formerly the monastery of S. Francesco di Paola, also suffered from the earthquake, and the course of repairs disclosed a subterranean chamber about 5 by 5 meters, with an entrance on the north side. Several small objects, of slight importance, were found in the chamber—a marble herm, 2 clay lamps, etc. More important was the discovery of the ancient cross-road which connected the Via Appia and the Via Latina about seven miles from Rome. This was found about 30 centimeters below the level of the Campagna. It is 2 meters wide and is excellently preserved throughout the distance (40 meters) which has been excavated.

The only work of any artistic worth found is a headless statue representing a matron in the guise of Ceres, uncovered in connection with improvements to the Rome-Naples railroad, near the arches of the Acqua Felice. With its plinth, the statue measures about 1.69 meter in height. The figure, clad in a chiton and a himation, rests its weight upon the right foot, and conforms to the Praxitelean type. Especially fine is the execution of the left hand and the draperies. The work is doubtless a copy of some celebrated original and was intended for a niche in some sepulchral monument, as the unfinished back seems to show.

At Pompeii, a number of inscriptions were found in the Via dell' Abbondanza. Excavations in the Casa di Trebio Valente revealed an elegant marble stand whose support is a herm of the bearded Dionysos, and three bronze statuettes, of inferior merit, representing Venus, Mercury, and Hercules. More interesting is the Oscan inscription painted in red letters which was found on the exterior wall of No. 2, Insula IV, Regio III. Unfortunately, about one-third of the inscription was destroyed by the subsequent insertion of a window to light the shop.

The inscription contains data that are of interest in early Pompeian topography in that it mentions a Via and a Turris Mefira, and a Porta Urubla.

At Ostia, the excavation of the Piazzale delle Corporazioni was completed. G. Calza therefore takes occasion (pages 138-139) to coordinate the data offered by the reports of earlier work and to present a description of the Piazzale which scholars will assuredly find

¹This paper was written in April, 1917, but its publication has been unhappily delayed, of necessity. C. K.

helpful. In addition to two inscriptions there were found two marble plaques ornamented with representations of the four seasons and two lateral triumphal fasces. These doubtless formed parts of a door. Spring, summer, and autumn are represented by winged putti; winter, by a winged female in a cloak. In the region between the Decumanus and the Via di Diana, a small sculptured column came to light, showing the Good Shepherd as a beardless youth, clad in a short tunic. It is evident that sheep were not the sculptor's specialty; the Shepherd, however, is well done. Another discovery, by an odd coincidence, bears witness to the religion which was supplanted by Christianity. This is a beautiful cylindrical altar found *in situ* in a small square between the Via di Diana and the Decumanus. It is of marble, measures 1.35 by .88 meters, and dates from the first century of the Empire. Its low relief sculpture represents a sacrificial scene. In the center is a square altar with a garland and bucrania, upon which a fire is burning. To the right of it is Hercules with his lion's skin flung over the left arm. At his feet is a pig. Behind him is a dancing Satyr of youthful aspect leading a man; these same figures, in slightly different attitudes, appear also to the left of the altar. The composition is good and the work not devoid of grace. An inscription between Hercules and the figures to the right of him reads: . . . (vico m)ag(ister) d(e) s(ua) p(ecunia) f(aciundum) c(uravit) Laribus vicin(is?) sacrum. And below: aram marmoream. Vicomagistri are known at Ostia; Laribus vicinis, if that is the correct reading, is strange. Among further discoveries at Ostia are an inscription to Aufidius Fortis and a terra cotta lamp ornamented with a small quadrangular structure and the bull, Apis.

At Carrara, some interesting iron implements of Roman times were found in a marble quarry. A collection of 544 coins of the Republic, found at Imola in July, 1913, is described by A. Negrioli (159-163). In April, 1916, 192 archaic Greek silver coins were found at Curinga (Bruttium), of which about one-third disappeared among the contadini. At Città di Castello, the ancient Tifernum Tiberinum, a necropolis was uncovered, in which the dead had been laid side by side with the heads toward the east. One is reminded of the similar orientation of bodies in Neolithic graves (see H. F. Osborn, *Men of the Old Stone Age*, 476). Near the railway station at Terni 53 graves containing skeletons, pottery, fibulae, etc., were found in 1911 and 1912, which are now discussed exhaustively by E. Stefani (191-226).

From Alife comes an interesting bronze statuette of Hercules Bibax. The hero is represented as a young man of muscular proportions, resting his weight upon the right foot. He is girt with the lion's skin for loin cloth, and carries a drinking horn in his right hand. The work possesses vigor but lacks grace. According to A. Levi, who publishes the statue, it is a derivative of the type created by Lysippus. The tradition of Greek art is further represented by two sculptures in marble

from Sezze. The first of these is a Muse clad in an exomis and himation, and the second is a head of the Apollo type which is strongly reminiscent of fourth century work in Greece.

UNIVERSITY OF MICHIGAN.

J. G. WINTER.

REVIEW

A History of Greek Economic Thought. By Albert Augustus Trever. Chicago: The University of Chicago Press (1916). Pp. 162.

The title of this doctor's dissertation is misleading: most of the ideas which are here discussed are not economic but ethical or political.

Of course the distinctions between economics, ethics, and political science are recognized by the author. On page 10 he says:

The assertion that Greek economic theory was confounded with ethics and politics has become a commonplace. The economic ideas of Greek thinkers were not arrived at as a result of a purposeful study of the problems of material wealth. All economic relations were considered primarily from the standpoint of ethics and state welfare. "The citizen was not regarded as a producer, but only as a possessor of wealth".

In the next sentence he adds, properly enough,

Such statements are too commonly accepted as a final criticism of Greek thinkers.

In the main, however, we are bound to say, this criticism is justified by Dr. Trever's own exposition, and very little of all the material which he has collected from the Greek literature deals with the problems of human life from an economic standpoint. The same confusion appears to exist in Dr. Trever's own mind, for under General Conclusions on the Importance and Influence of Greek Economics, he includes among the "important principles" which gained "recognition by one or more Greek thinkers", the statement "that all economic problems are moral problems (147)".

On the other hand, "despite the fact that Greek thought in this field was incidental to moral and political speculation, and despite a certain philosophic prejudice and limited economic vision"—these are Dr. Trever's own words (146)—, some views of these Greek theorists are distinctly economic. The following, taken from the General Conclusions (146-147), will serve as examples:

that the criteria of economic value are intrinsic utility, economic demand, and cost of production; that the division of labor is the fundamental principle at the foundation of all exchange; . . . that commerce merely for its own sake does not necessarily increase the national store . . . that private property is not a natural right, but a gift of society, and therefore that society may properly control its activities. . . .

Not only were such principles enunciated by ancient Greek philosophers, but, as Dr. Trever shows, Greek literature contains many practical suggestions for the solution of modern economic and social problems; many of the arguments for and against some of our modern

theories are also contained in this literature, and appear there free from some of the complications of modern controversy.

There is, however, a serious limitation to the value of the material collected in this dissertation, a limitation recognized by the author himself and frankly stated by him (10, 106, etc.). Most of the writers from whom he quotes were philosophers, who had little knowledge of, or interest in, what we should call business. Many of them had an aristocratic prejudice against business or money-making of any sort, as well as against manual labor in industrial occupations or even on the land; others affected to despise wealth altogether. For this reason the philosophers as a class were theorists without practical knowledge of economic problems, and discussed conditions as they believed they should be, not as they actually were. They do not represent fairly the opinions or the judgment of the business men of their time. A knowledge of Greek economics must be derived not so much from the theoretical discussions of the philosophers as from the incidental references to such matters in the writings of the orators and other ancient authors.

In conclusion, it must be said that Dr. Trever's terms and phrases are sometimes carelessly chosen. For example, he constantly translates Aristotle's term *χρηματιστική*, which includes *καπηλική* ('retail trade'), by the English term "finance" (111 f.). He translates *τῶν μεγίστων δοκούτων* by "of the best classes" (136). He speaks of "allowing the effect of demand to overcome unduly the cost of production", where he probably means 'overbalance'.

PRINCETON UNIVERSITY.

WILLIAM K. PRENTICE.

ANCIENT FISHES

An article which may well prove of interest to many students of the Classics was contributed to *Science*, 46.228-231, September 7, 1917, by Mr. C. R. Eastman, of The American Museum of Natural History, New York City, under the title *Fish Names, Ancient and Modern, and Early Illustrations of Fishes*. The article does not confine itself to fishes, but makes mention of studies in various fields of natural history in which scholars have sought to identify the names bestowed on plants and animals by ancient authors, particularly those of classical antiquity.

Mention is made, at the outset, of work by Professor D'Arcy Wentworth Thompson, author of a *Glossary of Greek Birds*, and of a translation of Aristotle's *Historia Animalium* (see *THE CLASSICAL WEEKLY* 5.57-58, 65-66). For an appreciation by a scientist of Professor Thompson's work the author refers to a paper by T. N. Gill, *Science*, 33 (1911), 730-738. Professor Gill himself had published an article, in 1873, in the *American Naturalist* 7.458-463, entitled *On the Status of Aristotle in Systematic Zoology*. In various papers and reviews, also, Professor Gill often discussed the etymologies of names of fishes. See especially *Bulletin of the George Washington University* 5 (1906).

Reference is next made to a catalogue of the fishes of Greece, by D. S. Jordon and H. A. Hoffmann, published in *Proceedings of the American Philosophical Society for 1892*.

Reference is then made to works in this field by Cuvier, A. Koraes (Coray), Johannes Müller, Louis Agassiz, Professors Felton and Sophocles, of Harvard University, Nicolaos Christo Apostolides, D. Bikélas, and Ioannos Bouras, etc. Charles Estienne (Stephanus) published, in at least three editions (1537, 1544, 1546), a book entitled *De Latinis et Graecis Nominibus Arborum, Fruticum, Herbarum, Piscium et Avium Liber*. Hosius, in his annotated edition of Decimus Ausonius Magnus, discussed the fishes mentioned by Ausonius in his *Mosella*; the work contains sixteen recognizable descriptions of fishes.

Mr. Eastman declares that a special bibliography would be required to enumerate all the articles that have been written on such subjects as prehistoric effigies of fishes, their representation in Egyptian monuments, ancient Greek vase paintings, and the catacombs of Rome.

In *Classical Philology* 13.1-13 Professor W. M. Lindsay writes on *Bird-Names in Latin Glossaries*. On pages 13-22 we have *Notes on the Foregoing Article*, by Professor Thompson (named above).

C. K.

THE CLASSICAL CLUB OF PHILADELPHIA

The 136th meeting of The Classical Club of Philadelphia was held on Friday evening, February 1, with 32 members present. Professor W. B. McDaniel read a paper entitled *Some Evil Eyes*. No summary can do justice to this fine paper. Professor McDaniel held that the superstitions concerning the evil eye grew up from the fact that in the entire anatomy of man the eye must have been the part which impressed primitive observers as being in some way connected with the inner life or soul. Obvious differences in eyes, especially abnormalities, would be noted, and could readily be given credit for emanation of malign influences through the 'windows of the soul'. The paper was particularly concerned with the presentation of a theory in explanation of the *pupula duplex*. An interesting exposition of the evidence; both classical and ophthalmological, led to the conclusion that *pupula duplex* was to be interpreted literally and not of difference in coloration of the iris, and that an actual duplication of the pupil would naturally be inferred by the ancient observer, from cases of bridge coloboma of the iris, which does not impair vision, is often confined to one eye, and is hereditary to a notable degree.

B. W. MITCHELL, Secretary.

A CORRECTION

In these productive days enough time elapses between the writing of an article and its appearance in print to admit of 'further reflection'. I now believe that Caesar (see *THE CLASSICAL WEEKLY*, 11.106-107) did not have the *ceruchi* in mind, nor yet the *anquinae*, but merely a vague idea (see the last two sentences of the third paragraph on page 107) of ropes *qui antemnas ad malos destinabant*, certainly not the halyards.

JOHN C. ROLFE.

THE CLASSICAL ASSOCIATION OF THE ATLANTIC STATES TWELFTH ANNUAL MEETING MAY 3-4, 1918

The Twelfth Annual Meeting of The Classical Association of the Atlantic States will be held at the Drexel Institute, Philadelphia, on Friday and Saturday, May 3-4.